AMENDMENT

Please amend the claims as set forth below:

    1. - 38. (Canceled).

    39. (Currently amended) A method for constructing a synthetic polynucleotide from which a polypeptide is producible to confer an immune response **of a selected class** to a target antigen in a mammal of interest in a different ~~quality~~ **strength, intensity or grade** than that conferred by a parent polynucleotide that encodes the same polypeptide, the method comprising: (a) selecting a first codon of the parent polynucleotide for replacement with a synonymous codon, wherein the synonymous codon is selected on the basis that it exhibits a different preference for conferring an immune response **of the selected class** than the first codon in a comparison of ~~immune response~~ preferences **of individual synonymous codons for conferring an immune response of the selected class** in test mammals, wherein the test mammals are selected from the group consisting of mammals of the same species as the mammal of interest and mammals of a different species than the mammal of interest; and (b) replacing the first codon with the synonymous codon to construct the synthetic polynucleotide.

    40. (Currently amended) A method according to claim 39, wherein the ~~immune response~~ preferences of **the individual synonymous** codons **for conferring an immune response of the selected class** in the test mammals are compared by: (i) separately introducing into the test mammals individual synthetic constructs, each of which comprises a regulatory polynucleotide operably linked to a tandem repeat of a codon fused in frame with a reporter polynucleotide that encodes a reporter protein, which produces, or which is predicted to produce, an immune response **of the selected class** ~~selected from the group consisting of the immune response to the target antigen and an immune response of the same class as the immune response to the target antigen~~; and (ii) comparing the ~~quality~~ **strength, intensity or grade** of the immune responses **of the selected class** displayed by the test mammals to determine the relative ~~immune response~~ preferences of the **individual synonymous** codons **for conferring the immune response of the selected class**.

    41. – 42. (Canceled).

    43. (Currently amended) A method according to claim 41 or claim 42, wherein the reporter protein is selected from antigens derived from pathogenic organisms, cancer antigens, self antigens, transplantation antigens, growth factors, hormones and toxins.

44. (Previously presented) A method according to claim 39, wherein the ~~phenotype~~ **immune response of the selected class** is selected from immunity and antigen tolerance.

45. (Canceled).

46. (Currently amended) A method according to claim 39, wherein the immune response **of the selected class** is a humoral immune response.

47. (Currently amended) A method according to claim 39, wherein the immune response **of the selected class** is a cell mediated immune response.

48. (Currently amended) A method according to claim 39, wherein the immune response **of the selected class** is an innate immunity mediated response.

49. (Previously presented) A method according to claim 40, wherein the synthetic constructs are introduced into the test mammals using the same or similar mode of introduction.

50. (Previously presented) A method according to claim 40, wherein the synthetic constructs are introduced into the test mammals at the same or corresponding site.

51. (Previously presented) A method according to claim 40, wherein the synthetic constructs are introduced by oral, intravenous, intramuscular, intranasal, buccal, subcutaneous, transdermal, buccal or sublingual route.

52. (Previously presented) A method according to claim 40, wherein the synthetic constructs are introduced into one or more cell or tissue types of the test mammals.

53. (Previously presented) A method according to claim 52, wherein the synthetic constructs are introduced into cells selected from muscle cells and skin cells.

54. (Previously presented) A method according to claim 40, wherein the tandem repeat of each of the synthetic constructs comprises at least three copies of the corresponding codon.

55. (Currently amended) A method according to claim 39, wherein the synonymous codon is selected such that it has a higher ~~immune response~~ preference **for conferring the immune response of the selected class** than the first codon.

56. (Currently amended) A method according to claim 39, wherein the synonymous codon is selected when the immune response **of the selected class** conferred by the synthetic construct comprising a tandem repeat of the synonymous codon is at least about 5% higher than the immune response **of the selected class** conferred by the synthetic construct comprising a tandem repeat of the first codon.

57. (Currently amended) A method according to claim 39, wherein the synonymous codon is selected such that it has a lower ~~immune response~~ preference **for conferring the immune response of the selected class** than the first codon.

58. (Currently amended) A method according to claim 57, wherein the synonymous codon is selected when the immune response **of the selected class** conferred by the synthetic construct comprising a tandem repeat of the synonymous codon is at least about 5% lower than the immune response **of the selected class** conferred by the synthetic construct comprising a tandem repeat of the first codon.

59. - 65 (Canceled).

66. (Currently amended) A method for determining the ~~immune response~~ preference of a first codon **for conferring an immune response of a selected class** in a mammal of interest, the method comprising: (a) introducing a synthetic construct into a test mammal, wherein the test mammal is selected from the group consisting of a mammal of the same species as the mammal of interest and a mammal of a different species than the mammal of interest, the synthetic construct comprising a regulatory polynucleotide operably linked to a tandem repeat of the first codon fused in frame with a reporter polynucleotide that encodes a reporter protein, which produces, or which is predicted to produce, an immune response **of the selected class** ~~to a target antigen or an immune response of the same class as the immune response to a target antigen~~; and (b) determining the ~~quality~~ **strength intensity or grade** of the ~~corresponding~~ immune response **of the selected class** displayed by the test mammal.

67. (Currently amended) A method according to claim 66, further comprising: comparing (i) the ~~quality~~ **strength, intensity or grade** of the ~~corresponding~~ immune response **of the selected class** displayed by a test mammal to which a synthetic construct comprising a tandem repeat of the first codon was provided; and (ii) the ~~quality~~ **strength, intensity or grade** of the ~~corresponding~~ immune response **of the selected class** displayed by a test mammal to which a synthetic construct comprising a tandem repeat of a second codon was provided, wherein the second codon encodes the same amino acid as the first codon, to thereby determine the ~~immune response~~ preference of the first codon relative to the ~~immune response~~ preference of the second codon **for conferring the immune response of the selected class** in the test mammal.

68. – 69. (Canceled).

70. (Previously presented) A method according to claim 66, further comprising: introducing the synthetic construct into a selected cell of the test mammal.

71. – 73. (Canceled).

74. (Withdrawn, currently amended) A method of modulating the ~~quality~~ **strength, intensity or grade** of an immune response **of a selected class** that is displayed by a mammal of interest and that results from the expression of a parent polynucleotide that encodes ~~the~~ **a** polypeptide, the method comprising: introducing into the mammal a synthetic polynucleotide that is distinguished from the parent polynucleotide by the replacement of a first codon in the parent polynucleotide with a synonymous codon that exhibits a different ~~immune response~~ preference **for conferring an immune response of the selected class** than the first codon in the mammal, wherein the synthetic polynucleotide is constructed according to the method of claim 39.

75. (Withdrawn, currently amended) A method of enhancing the ~~quality~~ **strength, intensity or grade** of an immune response **of a selected class** that is displayed by a mammal of interest and that results from the expression of a parent polynucleotide that encodes ~~the~~ **a** polypeptide, the method comprising: introducing into the mammal a synthetic polynucleotide that is distinguished from the parent polynucleotide by the replacement of a first codon in the parent polynucleotide with a synonymous codon that exhibits a higher ~~immune response~~ preference **for conferring the immune response of the selected class** than the first codon in the mammal, wherein the synthetic polynucleotide is constructed according to the method of claim 55.

76. (Withdrawn, currently amended) A method of reducing the ~~quality~~ **strength, intensity or grade** of an immune response **of a selected class** that is displayed by a mammal of interest and that results from the expression of a parent polynucleotide that encodes ~~the~~ **a** polypeptide, the method comprising: introducing into the mammal a synthetic polynucleotide that is distinguished from the parent polynucleotide by the replacement of a first codon in the parent polynucleotide with a synonymous codon that exhibits a lower ~~immune response~~ preference **for conferring the immune response of the selected class** than the first codon in the mammal, wherein the synthetic polynucleotide is constructed according to the method of claim 57.

77. (Canceled)

78. (Currently amended) A method according to claim 39, wherein the immune response **of the selected class** conferred by the synthetic polynucleotide is stronger than the immune response **of the selected class** conferred by the parent polynucleotide.